

(19) World Intellectual Property Organization
International Bureau



(43) International Publication Date
20 October 2005 (20.10.2005)

PCT

(10) International Publication Number
WO 2005/096727 A3

(51) International Patent Classification:
G05G 1/14 (2006.01)

(21) International Application Number:
PCT/US2005/010268

(22) International Filing Date: 29 March 2005 (29.03.2005)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
60/557,187 29 March 2004 (29.03.2004) US

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(81) Designated States (*unless otherwise indicated, for every
kind of national protection available*): AE, AG, AL, AM,
AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN,
CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI,

GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE,
KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD,
MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,
PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SM, SY,
TJ, TM, TN, TR, TT, TZ, UA, UG, US, UZ, VC, VN, YU,
ZA, ZM, ZW.

(84) Designated States (*unless otherwise indicated, for every
kind of regional protection available*): ARIPO (BW, GH,
GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM,
ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI,
FR, GB, GR, HU, IE, IS, IT, LT, LU, MC, NL, PL, PT, RO,
SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN,
GQ, GW, ML, MR, NE, SN, TD, TG).

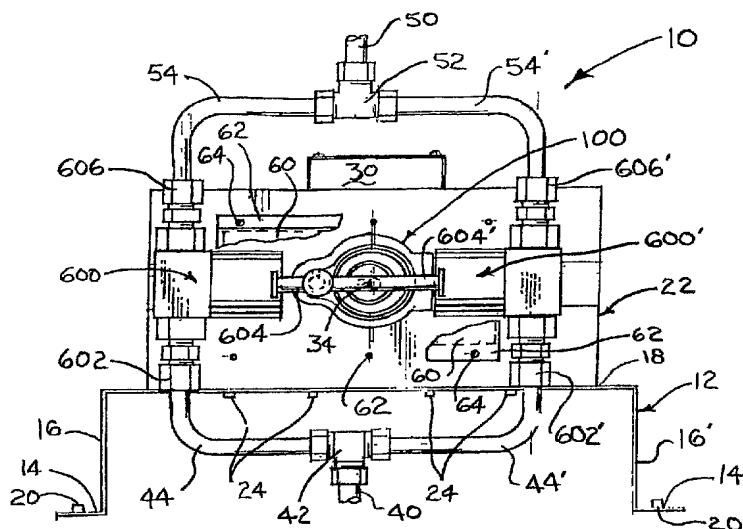
Published:

- with international search report
- before the expiration of the time limit for amending the
claims and to be republished in the event of receipt of
amendments

(88) Date of publication of the international search report:
27 April 2006

*For two-letter codes and other abbreviations, refer to the "Guid-
ance Notes on Codes and Abbreviations" appearing at the begin-
ning of each regular issue of the PCT Gazette.*

(54) Title: APPARATUSES AND METHODS FOR PUMPING FLUIDS



(57) **Abstract:** Apparatuses and methods are provided for transferring axial rotational motion of a drive shaft to linear reciprocating motion to drive a piston, for example in a fluid pump. The apparatus includes a cam having: a generally cylindrical body portion; and a drive-shaft connector, wherein the drive-shaft connector is: adapted to be part of an operable connection between the drive shaft and the cam, and located along an eccentric axis of the cam. The apparatus includes a plurality of bearings, wherein the plurality of bearings are operatively positioned around the cam. The apparatus also includes a planetary, wherein the planetary includes: a generally cylindrical opening adapted to be operatively positioned around the plurality of bearings; and a follower connector, wherein the follower connector is adapted to be part of an operable connection transferring a component of the circular orbital motion of the planetary to the linear reciprocating motion of the piston. Also provided is an improved pump and improved discharge valve assembly for pumping fluids.

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